

Radiobiologie de l'irradiation externe

Most of what we know about the biological effects of radiations comes from studies using external beam radiation. Particularly, the therapeutic efficacies of low linear energy transfer LET radiation (X and γ rays, electrons) and high (LET) particles radiation used in clinic have been extensively investigated. So far, the biological effects of radiation was considered to be strictly dependent on the absorbed dose rate, absorbed dose fractionation, tissue oxygenation, volume of irradiated tissue and genetic of the targeted tissue. Recently, new modalities of irradiation as ultra-high dose rate irradiation (FLASH) or minibeam spatial fractionation have highlighted the role of the molecular and chemical reactions, and cell complexity in the biological response. The radiobiology of targeted radionuclide therapy will probably get profit of the lessons learned from these recent innovations.

Orateur: Dr DUTREIX, Marie (Institut Curie)

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